



Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Compressors/Engines ☐
Dehydrators ☐
Pipelines ☐
Pneumatics/Controls ☒
Tanks ☐
Valves ☐
Wells ☐
Other ☐

Install Electronic Flare Ignition Devices

Applicable sector(s):

☒ Production ☒ Processing ☒ Transmission and Distribution

Partners reporting this PRO: Chevron U.S.A. Production Company

Other related PROs: Install Flares, Install BASO® Valves

Technology/Practice Overview

Description

Flares are used to safely dispose of combustible gas and avoid releasing it to the atmosphere. Some flares have one or more continuously burning pilot flames, while others save gas by only igniting pilot flames in preparation for use. Pilots can be blown out by wind and, in the latter case, gas leakage and/or waste gas is occasionally released to an unlit flare, both situations resulting in methane, VOC and hazardous air pollutant (HAP) emissions to the atmosphere.

This technology replaces the intermittently or continuously burning flare pilots with electrical sparking pilots similar to a modern gas stove. These sparking pilots require low electrical power that can be supplied from a battery with solar recharge in remote sites. In addition to using electronic flare ignition devices for pilots, facilities may also install sensors to detect the pilot flame and shut-off fuel gas if the pilot is extinguished.

Principal Benefits

Reducing methane emissions was:

☐ A primary justification for the project ☒ An associated benefit of the project

Operating Requirements

A low amperage electrical power supply is required, such as solar recharged batteries.

Applicability

This technology can be applied to all pilot flame ignition systems, including flares and heaters.

Methane Savings

1.68 Mcf/yr

Costs

Capital Costs (including installation)

☐ < \$1,000 ☒ \$1,000-\$10,000 ☐ > \$10,000

Operating and Maintenance Costs (Annual)

☒ < \$100 ☐ \$100-\$1,000 ☐ > \$1,000

Payback (Years)

☐ 0-1 ☒ 1-3 ☐ 3-10 ☐ > 10

Methane Emission Reductions

Methane emissions occur from leaking or venting un-combusted natural gas through an unlit flare. Leakage may occur through emergency relief valves and blowdown valves connected to a flare. Venting occurs when flare pilot flames are occasionally blown out by high winds, causing release of methane at 70 scf/hr per pilot until they are re-lit or shut-off.

Economic Analysis

Basis for Costs and Savings

Methane emission reductions of 1.68 Mcf/yr apply to the installation of one electronic ignition device replacing a single pilot that is blown out for 24 hours per year.

Discussion

This technology can payback in less than three years. The primary economic justification is the savings of natural gas burned in flare pilots, and not in the reduction of natural gas released through unlit pilots or flares. The gas savings associated with converting a continuous burning pilot to an electronic ignition are, on average, 70 scf/hr per pilot. An associated benefit is a reduction in VOC and HAP emissions.